SOUTH CAROLINA DEPARTMENT OF DISABILITIES AND SPECIAL NEEDS

Volume 2 Issue 6

June 2003

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FROM THE DESK OF THE DDSN MEDICAL CONSULTANT

INSIDE THIS ISSUE:

PNEUMONIA

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WHAT IS PNEUMONIA?

The lungs are a branching set of tubes that lead the air we breathe in down into air sacs or alveoli. In the alveoli the air can transfer the oxygen we need into the blood that flows in the area and the air takes up the excess carbon dioxide we do not need from the blood. When this process is not working, we will get ill. If we have an infection in the alveoli and reaction fluid fills the spaces of the alveoli, then the transfer does not work well and the infection leads us to feel sick, tired, breathless, hot and cold, aching, not able to be active, and it can lead us into a very serious illness. The infection of the spaces in the alveoli is called a pneumonia. It may be caused by bacteria, viruses, or even fungi. These are all infectious agents and may be in infectious particles that get into the alveoli.

NATURAL PROTECTION AGAINST PNEUMONIA

Normally the lower parts of the lungs have no infectious particles present even though they may be in the air we breathe in and in our mouth and throat where normally there are many organisms without problems. The alveoli are protected from invading infectious agents by several processes. Mucus traps the infectious agents and the body moves them away to be disposed of.

First, infectious particles are trapped in mucus in the back of the nose where they may be sneezed out (use a handkerchief!) or move down into the back of the throat. Here the particles and mucus may be coughed out (**handkerchief!**) or swallowed into the stomach where the acid destroys most of them. The lungs are protected from materials entering during swallowing by the epiglottis that closes the airways as food is swallowed into the esophagus (upper gut). In the large airway of the lungs there is a remarkable system for trapping and clearance of infectious particles. The mucus and the particles it traps are moved up the airways for clearance. This is done by the action of cilia (microscopic finger projections of the surface of the cells lining the tubes). If infectious particles get into the airspaces of the lungs, there are special cells that will catch them and then react with an immune response that is aimed to destroy the invader. Unfortunately, this response can cause problems and in particular may lead to reaction fluid filling the alveoli. This fluid blocks the gas transfer and causes the x-ray changes that we see in pneumonia. This and other parts of the immune reaction cause us to feel ill.

How can we help protect against pneumonia?

Pneumonia happens if there is a way for infectious particles to get into the alveoli and there cause a reaction. We can protect against pneumonia by avoiding them getting into the lungs, helping the lungs clean them away, and by reducing the reaction to them. The infectious particles may get into the air if another person with a cold or respiratory infection coughs or sneezes and does not cover their mouth. The infectious agents may be in food that can get into the lungs. This material may be aspirated (breathed in) into the lungs during swallowing or because of reflux or come from the mouth. If the amount of unwanted material that enters the lung is too much for the defenses it makes, it is likely we will get pneumonia. For our consumers there are four areas that we can focus on to help reduce how many times they may get pneumonia. These are:

- ***Oral Health***
- ***Swallowing***
- ***Reflux***
- ***Immunity***

ORAL HEALTH

We have many organisms in our mouth and they usually are no problem for us. However, if we have poor oral health it is more of a risk that some of the secretions can get into the lungs with infectious particles present. Please ensure our consumers have good tooth brushing, flossing, and follow up by the dentist.

SWALLOWING

Safe swallowing allows food to leave the mouth and enter the esophagus to get to the stomach without spilling into the airways to the lungs. It is a complicated procedure that is routinely automatic but for many of the persons we care for, their neurological problems increase the chance of a difficulty and food getting into the airways. Though a cough will usually clear it, some can enter the lungs.

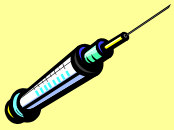
To swallow safely, the food or liquid is moved off the back of the tongue, the glottis flap closes the airway and the muscles of the lower throat and upper esophagus coordinate to push the food/liquid into the esophagus and down to the stomach, as we briefly hold our breath. This process is helped if the amount of food in the mouth is right, if we are not hurried, if the texture of the food is good for the system and the system is well tuned. For those consumers who have problems in organising this, there is a risk they may aspirate and have problems. Aspiration can occur when we swallow our saliva but is more dangerous when we are eating.

Check on Health

Ask for help if person coughs during a meal.

Follow meal feeding program carefully.

Immunize for flu and pneumococcus.



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Please monitor the persons you care for during a meal. There can be problems if they do not chew well, overfill their mouth, or are in a hurry. They may cough as they try to clear material that may have entered the airway. If this happens, please ask for help from your nutrition management team or your occupational therapist (OT) or speech and language pathologist (SLP). They can assess the problem and may use studies like medical examinations and x-rays to help. If there is a feeding plan developed, please follow it. Take note of food consistency, spoonful size, speed of feeding, positioning for meals and other special requirements. If the pattern changes or the person still is coughing during meals, please arrange a review. When we take care in feeding, we can reduce pneumonia significantly.

REFLUX

We are constantly being told on TV ads about the risks of reflux of stomach contents into the esophagus. If reflux occurs in a person who has problems with closing the airway off, then it increases the risk of aspirating material into the lungs. As this liquid is from the stomach it is acid and can irritate the airways of the lungs and give infectious agents a change to invade more easily. We need to reduce this risk by treating reflux with acid reducing measures (mostly medication) and reflux reducing measures (sometimes medication but usually positioning). This is why it is important to keep some consumers in the upright position for awhile after meals. Please follow any positioning plan fully as it reduces risks of serious problems. We also use acid reducing medication.

IMMUNITY

Pneumonia is less likely to occur if a person is kept in good general health, well nourished, in a positive state of mind and active. This is a general goal for our care of all our consumers.

Because we know that there are some common infectious agents that can cause pneumonia one part of protecting our consumers is sensible immunization. An annual influenza vaccination will reduce the chance of pneumonia during the flu season. Also, any of our consumers who are over 50 years of age or have risks of pneumonia will usually benefit from a vaccine (Pneumovax) against the pneumococcus that is the most common bacteria that causes pneumonia. Please check with your health advisor.

SUMMARY

Our consumers have an increased risk of pneumonia and we aim to protect them where possible. It is in the day-by-day careful use of our precautions that we have the greatest effect. Aspiration episodes do not always result in pneumonia but it is one area that we can reduce the numbers of problems. We need to watch for difficulties like coughing at meals, vomiting, reflux pain, poor dental health, and then ask for help, develop a management plan and follow it everyday.

If one of the persons you care for has loss of appetite, loss of energy, withdrawal, fast breathing, loss of breath, avoidance of activity, fever, or fast pulse, please think of pneumonia as a possible cause and ask for assistance from your health care team member. Pneumonia is a serious illness and we hope to avoid it where possible but need to recognize it and treat it early and aggressively if it does occurs.